

# Clad Ultimate Insert Double Hung

Unit Features.....	1
Standard Divided Lite Option .....	3
Optional Interior Square Simulated Divided Lite .....	4
Egress and Vent Openings .....	5
Minimum and Maximum Guidelines, Oversize Limits, Certified Sizes and Ratings .....	6
Measurement Conversions: Operators .....	7
Measurement Conversions: Transom and Picture .....	8
Measurement Conversions: Field Measurement.....	9
Section Details: Operating.....	10
Section Details: Transom .....	11
Section Details: Picture .....	12
Mullions .....	13
Clad Application .....	14



# Clad Insert Double Hung

## Unit Features

Clad Ultimate Insert Double Hung: CINDH

Clad Ultimate Transom Windows: CINDHT

Clad Ultimate Picture Windows: CINDHP

### Frame:

- Frame depth is 3 1/4" (83)
- Sill thickness, head and side jambs are 21/32" (17) with 1 5/16" (33) wide composite jambs.
- Sill options available: 8 degree or 14 degree bevel at the bottom or a flat sill with 1 5/32" (29) thickness.

### Sash:

- Nominal sash thickness: 1 5/8" (41) with 11/16" (18) insulating glass. For Tri-pane glass, 1 7/8" (48) sash is required with 7/8" (22) glazing.
- Picture sash thickness: 2" (51) with 1" (25) glass.
- Operating sash are removable for cleaning.
- Incorporates traditional wide bottom rail in bottom sash - 3 9/16" (90).
- Single Hung conversion kits available. Cottage and oriel sash configuration available.

### Hardware:

- Sash lock and keeper: Open style crescent cam lock with sash release lever, surface mounted. Color: Satin Taupe. Optional colors: Bronze, White, Brass, Antique Brass, Satin Chrome, Satin Nickel and Oil Rubbed Bronze.
- Balance system: block and tackle coil spring.
- The jamb track is a vinyl extrusion. Color: Beige. Optional color: White.

### Weather Strip:

- Jamb weather strip is a foam type weather strip which seals against both the bottom sash and top sash stiles.
- Top sash has a weather strip on the check rail that seals to the bottom sash check rail when the sash lock is engaged.
- The top rail seals against a weather strip on the head jamb parting stop.
- The bottom sash has a weather strip on the bottom of the lower rail which seals against the sill.

### Insect Screens:

- Standard Screen is roll formed aluminum.
- Aluminum screen: Full Screen standard, half screen optional.
- Aluminum surround to match exterior frame clad color.
- Screen mesh: Standard is Charcoal Fiberglass. Optional: Charcoal High Transparency Fiberglass Mesh, Charcoal Aluminum Wire, Black Aluminum Wire, Bright Aluminum Wire, or Bright Bronze Aluminum Wire.
- Optional Double Hung Magnum Screen, extruded aluminum screen.

### Glass and Glazing:

- Glazing method: Insulating
- Glazing seal: Silicone bedding on the interior, acrylic foam adhesive tape on the exterior
- Standard glass is insulating Low E2 Argon or Air.
- Insulating glass will be altitude adjusted with capillary tubes for higher elevations. Argon gas is not available for elevations that require capillary tubes.

### Optional Glass

- Low E1 Argon or Air, Low E3 Argon or Air, Clear, Laminated, Tempered, Obscure, Bronze tint, Gray tint, Reflective Bronze, decorative glass options.
- 7/8" or 1" Tripane Low E1 outer piece and Low E1 Argon inner piece
- 7/8" or 1" Tripane Low E1 outer piece and Low E1 Krypton-Argon inner piece
- 7/8" or 1" Tripane Low E2 outer piece and Low E2 Argon inner piece
- 7/8" or 1" Tripane Low E2 outer piece and Low E2 Krypton-Argon inner piece
- 7/8" or 1" Tripane Low E3 outer piece and Low E1 Argon inner piece
- 7/8" or 1" Tripane Low E3 outer piece and Low E1 Krypton-Argon inner piece

## Clad Insert Double Hung

### Unit Features

#### CE Optional Glass

- Glazing method: Insulating
- Glazing seal: Silicone glazed
- Standard Glass is 11/16" (18) insulating Low E2 Argon or air
- Optional dual glazing available: Low E1 Argon or air, Low E3 Argon or air, Low E2/ERS Argon or air, Low E2/ERS Argon or air, Clear, Laminated Clear, tints, tempered and sandblasted
- 7/8" (22) or 1" (25) Tripane glass types: Low E1/E1 Argon or Krypton-Argon, Low E2/E2 Argon or Krypton-Argon, Low E3/E1 Argon or Krypton-Argon
- Glass panes available in 3, 4, and 6 mm thicknesses
- Laminated panes available in 7.0 and 7.8 mm thicknesses
- Glazing will be altitude adjusted for higher elevations, Argon, Argon-Krypton, and Krypton gas not included

#### Accessories:

- Installation Accessories
  - Factory installed vinyl sill fin (8 degree sill option only)
  - Two (2) 5/16" - #10 x 2 1/2" jamb jack screws
  - Four (4) #7 x 2" Phillips pan-head installation screws
  - Two (2) jamb liner check rail pads
  - Two (2) color matched clad jamb plugs (exterior).
  - Two (2) wood flat head plugs (interior).
- Sash Lifts
  - High pressure zinc die-cast.
  - Color: Satin Taupe. Optional colors: Bronze, White, Brass, Antique Brass, Satin Chrome, Satin Nickel and Oil Rubbed Bronze.
- Aluminum Extrusions
  - Profiles: Frame Expander, Extruded Panning, Mullion covers as indicated by drawings.
  - Finish: Fluoropolymer modified acrylic topcoat applied over primer. Available in standard, select, and custom colors.

# Clad Insert Double Hung

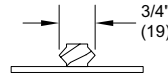
## Standard Divided Lite Option



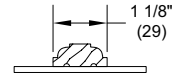
Insulating Glass



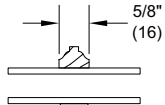
Aluminum 23/32"  
Contour GBG



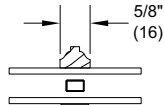
3/4" Grille



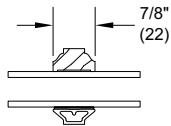
1 1/8" Grille



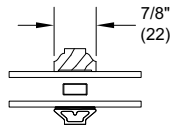
5/8" SDL



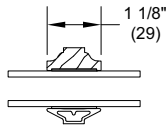
5/8" SDL  
W/Spacer



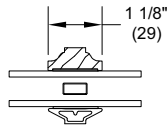
7/8" SDL



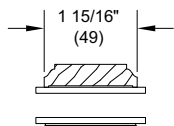
7/8" SDL  
W/Spacer Bar



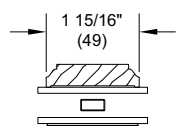
1 1/8" SDL



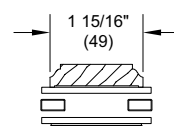
1 1/8" SDL  
W/Spacer Bar



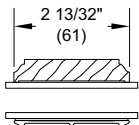
1 3/4" SDL



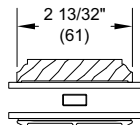
1 3/4" SDL  
W/One Spacer Bar



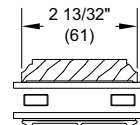
1 3/4" SDL  
W/Two Spacer Bars



2 13/32" SDL



2 13/32" SDL  
W/One Spacer Bar

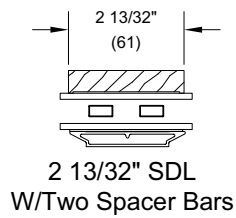
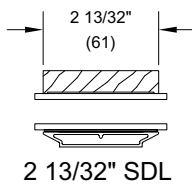
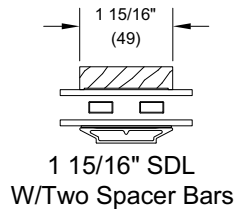
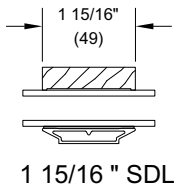
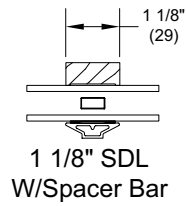
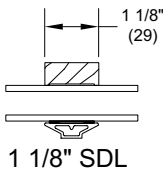
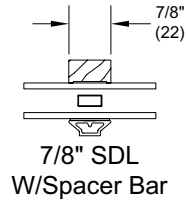
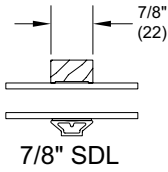
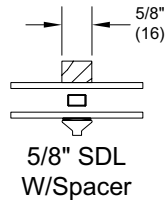
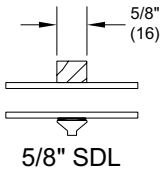


2 13/32" SDL  
W/Two Spacer Bars

OGEE INTERIOR

# Clad Insert Double Hung

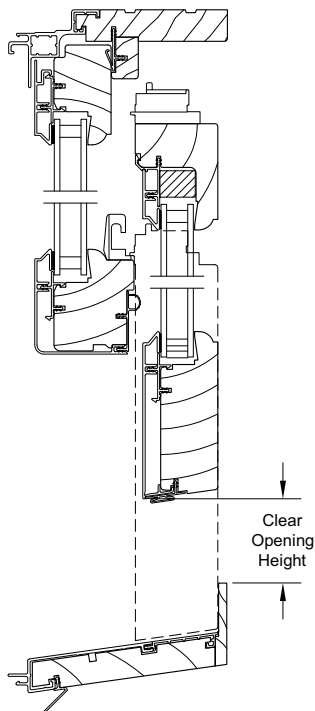
## Optional Interior Square Simulated Divided Lite



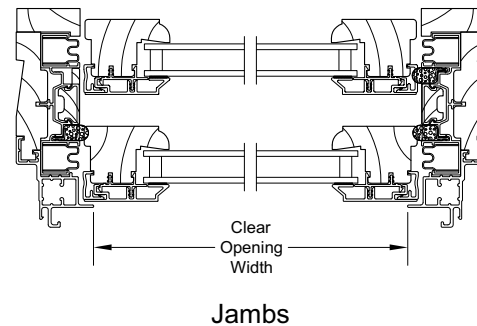
Egress and Vent Openings

Minimum Egress Requirements			
Inside Opening Width		Inside Opening Height	
in	mm	in	mm
26	(660)	84 1/16	(2135)
28	(711)	78	(1981)
30	(762)	72 15/16	(1853)
32	(813)	68 9/16	(1741)
34	(864)	64 3/4	(1645)
36	(914)	61 7/16	(1561)
38	(965)	58 7/16	(1484)

Egress Unit Minimum Openings and Conversions from Frame Size			
Desired Dimension	Formula	Formula	Minimum Value for Net Clear Opening
	0 and 8 degree bottom sill	14 degree bottom sill	
Egress Opening Width (inches)	= CINDH frame OM width - 3.232	= CINDH frame OM width - 3.232	20 inches
Egress Opening Height (inches)	= (CINDH frame OM height / 2) - 5.268	= (CINDH frame OM height / 2) - 5.462	24 inches
Egress Opening Area (sq. ft.)	= (Egress Width X Egress Height) / 144	= (Egress Width X Egress Height) / 144	5.7 sq. ft.



Head Jamb and Sill



Jambs

**NOTE:** Units with an inside opening width greater than 38" wide and inside opening height greater 58 7/16" meet minimum egress requirements.

# Clad Insert Double Hung

## Minimum and Maximum Guidelines, Oversize Limits, Certified Sizes and Ratings

Minimum and Maximum IO Guidelines														
Unit Type	Min IO Width at Least		Min IO Height Must be at Least		Min IO Width at Least		Min IO Height Must be at Least		Max IO Width		Max IO Height		Max IO Area	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Sq. Feet	Sq. Meters
CINDH	13 11/16	(348)	31 25/64	(797)	17 11/16	(449)	23 25/64	(594)	44	(1118)	77 39/64	(1971)	24	2.203
CINDHT	13 11/16	(348)	16 51/64	(427)	17 11/16	(449)	12 51/64	(325)	44	(1118)	23 3/64	(585)	7	0.654
CINDHP	13 9/16	(344)	17 15/16	(456)	17 9/16	(446)	13 15/16	(354)	68	(1727)	77 39/64	(1971)	37	3.405

NOTE: Some restrictions may apply, contact your Marvin representative with questions.

Oversize Limits						
Unit Type	Max IO Width		Max IO Height		Max IO Area	
	in	mm	in	mm	Sq Feet	Sq Meters
CINDH	48	(1219)	85 39/64	(2174)	24	2.203
CINDHT	48	(1219)	23 3/64	(585)	7	0.654
CINDHP	68	(1727)	85 39/64	(2174)	37	3.405

Maximum Limits for CE Mark - CINDH Operable, Transom and Picture				
Unit Type	Max Frame Size Unit			
	Width		Height	
	in	mm	in	mm
CINDH	46	(1168)	80 1/16	(2034)
CINDHT	48	(1219)	23 3/64	(585)
CINDHP	62	(1575)	85 39/64	(2174)

NOTE: Oversized width and height max for CINDH is available in either width or height but not both.

Oversized units are not certified

Product	Air Tested to psf	Water Tested to psf	Structural Tested to psf	Certification Rating	Design Pressure (DP)	Overall Width		Overall Height	
						in	mm	in	mm
Clad Insert Double Hung	1.57	4.5	45	LC-PG30-H	30	45	(1143)	77 3/8	(1965)
Clad Insert Double Hung Picture	1.57	6	60	CW-PG40-FW	40	68	(1727)	77 5/8	(1972)
Clad Insert Double Hung Transom	1.57	6	60	LC-PG40-TR	40	75 5/8	(1921)	28	(711)

NOTE: For CE ratings, please refer to CE Performance Section.



# Clad Insert Double Hung

## Measurement Conversions: Operators

Clad Ultimate Insert Double Hung Operating Unit						
Unit Measurements		Width		Height		
From	To					
Daylight Opening		in	mm		in	mm
Daylight Opening	Bottom Sash OM	+ 3 17/32	(90)		+ 5 11/16	(144)
Daylight Opening	Top Sash OM	+ 3 17/32	(90)		+ 3 15/16	(100)
Daylight Opening	Glass OM	+ 1 1/16	(27)		+ 1 1/16	(27)
Daylight Opening	Screen OM	+ 4 13/32	(112)	(DLO x 2)	+ 8 1/2	(216)
Daylight Opening	Grille	Order by DLO		Order by DLO		

Clad Ultimate Insert Double Hung Operating Unit											
Inside Opening		Width		Height							
From	To			Flat Bottom Sill			8 and 14 Degree Bottom Sill				
Inside Opening		in	mm	in	mm			in	mm		
Inside Opening	Bottom Sash OM	-3 7/32	(82)	-8	(203)	+	2	-7 7/16	(189)	+	2
				+ 4 5/8	(117)			4 5/8	(117)		
Inside Opening	Top Sash OM	-3 7/32	(82)	-8	(203)	+	2	-7 7/16	(189)	+	2
				+ 2 7/8	(73)			+ 2 7/8	(73)		
Inside Opening	Daylight Opening	-6 3/4	(171)	-10 1/8	(257)	+	2	-9 9/16	(243)	+	2
Inside Opening	Glass OM	-5 11/16	(144)	-8	(203)	+	2	-3 23/32	(94)		
						8° Bottom Sill		14° Bottom Sill			
Inside Opening	Frame OM @ Interior	-3/8	(10)	-1/4	(06)	-1/4	(06)	-1/4	(06)		
Inside Opening	Frame OM @ Exterior	-3/8	(10)	-1/4	(06)	+ 5/16	(08)	+ 11/16	(17)		

## Measurement Conversions: Transom and Picture

Clad Ultimate Insert Double Hung Transoms					
Unit Measurements		Width		Height (not affected by sill)	
From	To				
Daylight Opening		in	mm	in	mm
Daylight Opening	Sash OM	+ 3 17/32	(90)	+ 4 3/8	(111)
Daylight Opening	Glass OM	+ 1 1/16	(27)	+ 1 1/16	(27)
Daylight Opening	Grille	order by DLO		Order by DLO	

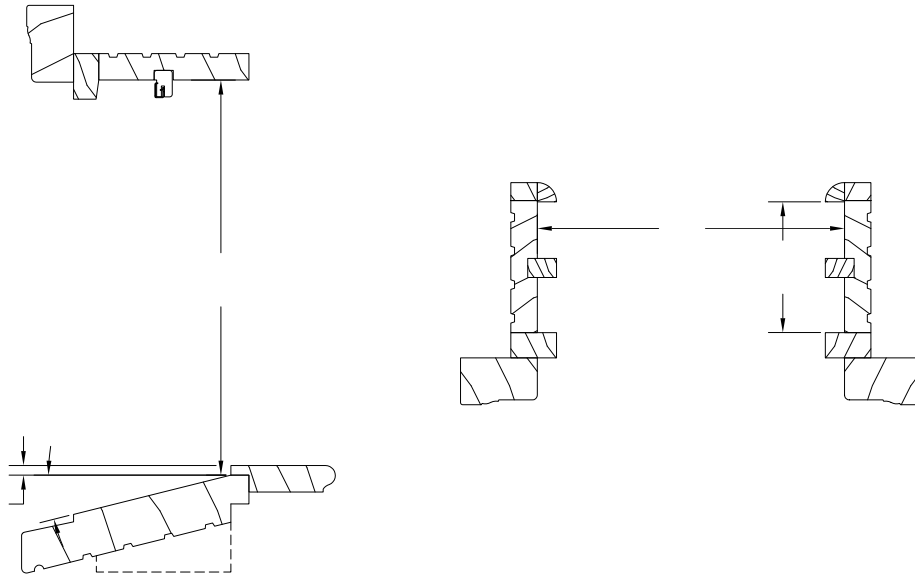
Unit Measurements		Width		Height					
From	To			Flat Bottom Sill		8 and 14 Degree Bottom Sill			
Inside Opening		in	mm	in	mm	in	mm	in	mm
Inside Opening	Sash OM	-3 7/32	(82)	-2 1/8	(54)	-1 9/16	(40)		
Inside Opening	Daylight Opening	-6 3/4	(171)	-6 15/32	(164)	-5 15/16	(151)		
Inside Opening	Glass OM	-5 11/16	(144)	-5 13/32	(137)	-4 7/8	(124)		
						8° Bottom Sill		14° Bottom Sill	
Inside Opening	Frame OM @ Interior	-3/8	(10)	-1/4	(06)	-1/4	(06)	-1/4	(06)
Inside Opening	Frame OM @ Exterior	-3/8	(10)	-1/4	(06)	+ 5/16	(08)	+ 11/16	(17)

Clad Insert Double Hung Picture					
Unit Measurements		Width		Height (not affected by sill type)	
From	To				
Daylight Opening		in	mm	in	mm
Daylight Opening	Sash OM	+ 4 7/8	(124)	+ 5 21/32	(144)
Daylight Opening	Glass OM	+ 1 3/16	(30)	+ 1 3/16	(30)
Daylight Opening	Grille	order by DLO		order by DLO	

Unit Measurements		Width		Height					
From	To			Flat Bottom Sill		8 and 14 Degree Bottom Sill			
Inside Opening		in	mm	in	mm	in	mm	in	mm
Inside Opening	Glass OM	-5 3/4	(146)	-6 27/32	(174)	-6 13/32	(163)		
Inside Opening	Daylight Opening	-6 13/16	(173)	-7 29/32	(201)	-7 15/32	(190)		
Inside Opening	OM of Sash	-1 15/16	(49)	-2 1/4	(57)	-1 13/16	(46)		

**Measurement Conversions: Field Measurement**

Conversion from Field Measurement to Frame OM		
Width		
Condition	Formula	
If blind stop width is 1/2 inch or less	CINDH frame OM width = inside opening width - 0.375	
Height		
Condition	Type of Sill	Formula
If old sill angle is less than 8 degrees	Flat bottom Sill	CINDH frame OM height = inside opening height - 0.250
If old sill angle is 8 degrees or more but less than 14 degrees	8 degree bottom sill	CINDH frame OM height = inside opening height + 0.312 (frame OM height has a .250 clearance)
If old sill angle is 14 degrees or more	14 degree bottom sill	CINDH frame OM height = inside opening height + 0.700 (frame OM height has a .250 clearance)

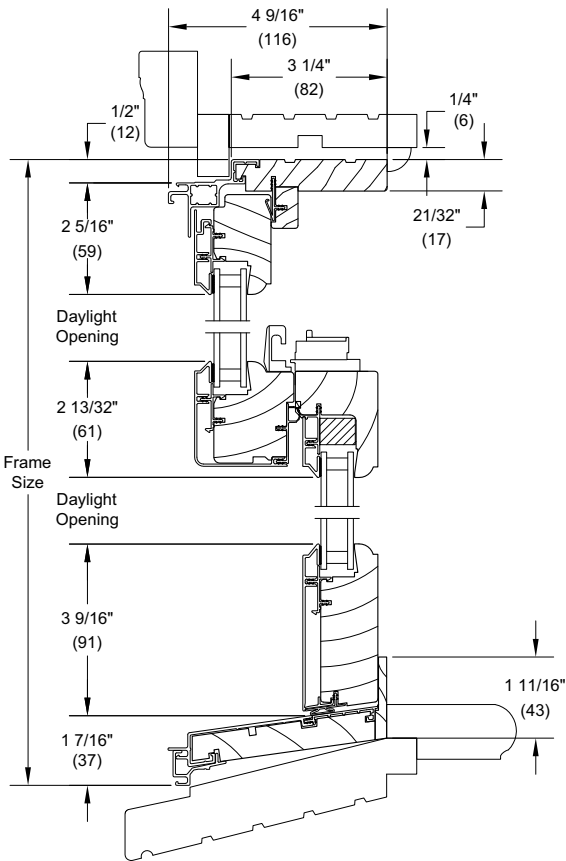


*NOTE: For additional measuring instructions see Marvin Insert Window Measuring Instructions.*

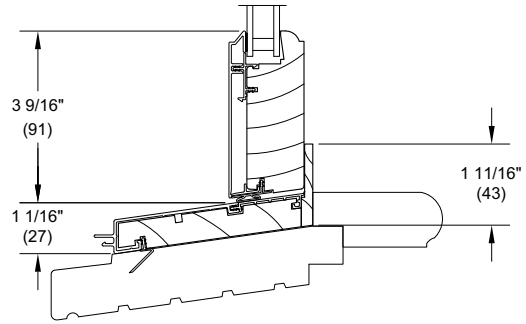
# Clad Insert Double Hung

## Section Details: Operating

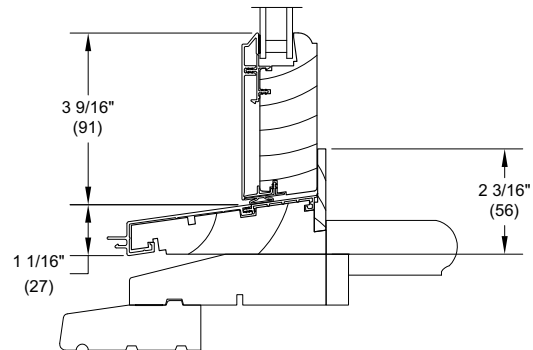
Scale: 3" = 1' 0"



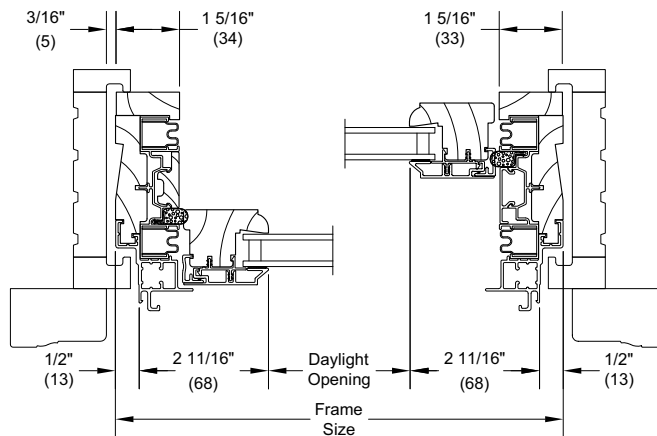
**14 Degree Bevel Sill Option**  
Installed in existing frame



**8 Degree Bevel Sill Option**  
Installed in existing frame



**Flat Frame Sill Option**  
Installed in existing frame

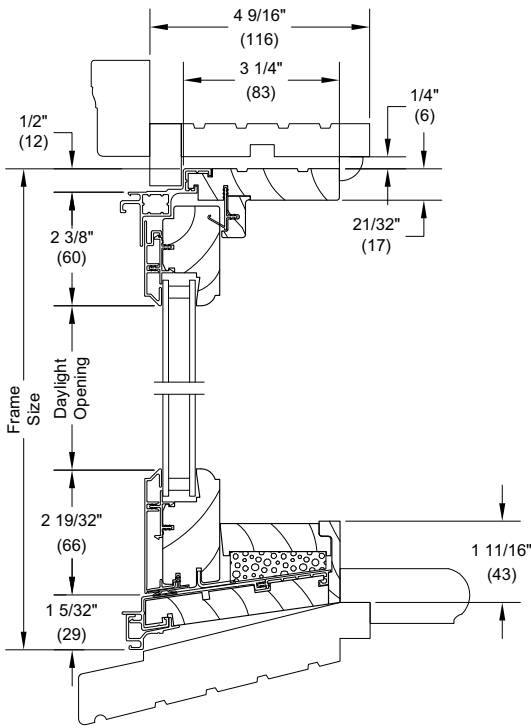


**Jamb**  
in existing frame

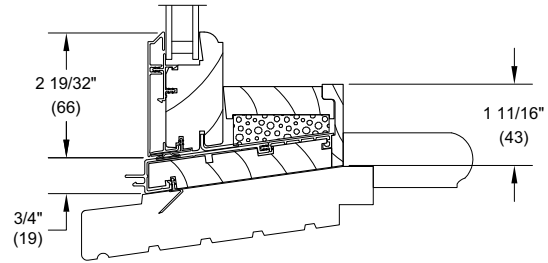
# Clad Insert Double Hung

## Section Details: Transom

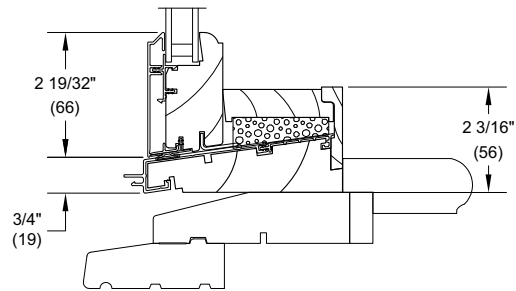
Scale: 3" = 1' 0"



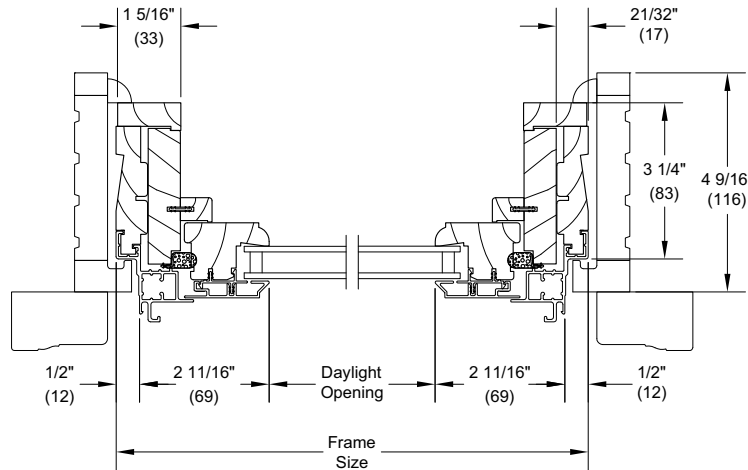
**14 Degree Bevel Sill Option  
Installed in existing frame**



**8 Degree Bevel Sill Option  
Installed in existing frame**



**Flat Frame Sill Option  
Installed in existing frame**

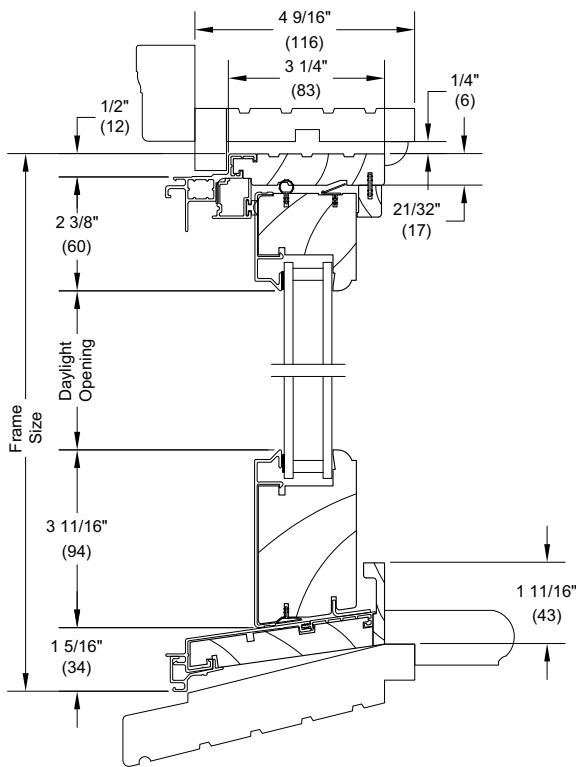


**Jamb  
in existing frame**

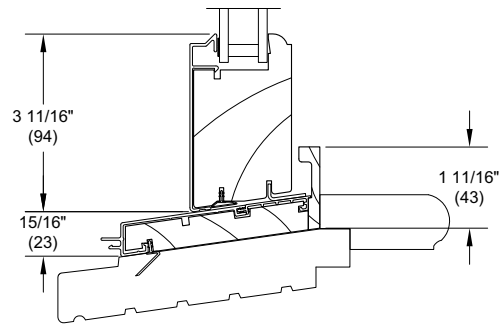
# Clad Insert Double Hung

## Section Details: Picture

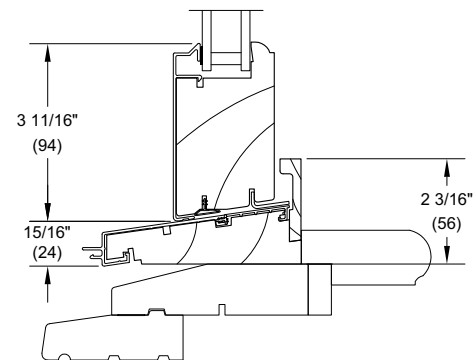
Scale: 3" = 1' 0"



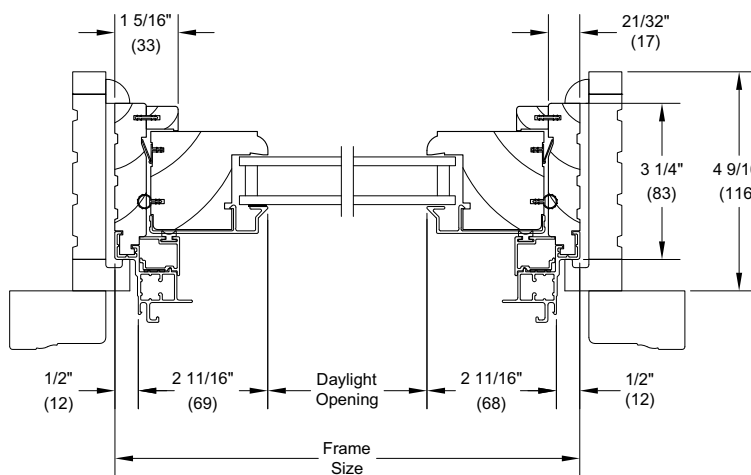
**14 Degree Bevel Sill Option  
Installed in existing frame**



**8 Degree Bevel Sill Option  
Installed in existing frame**



**Flat Frame Sill Option  
Installed in existing frame**

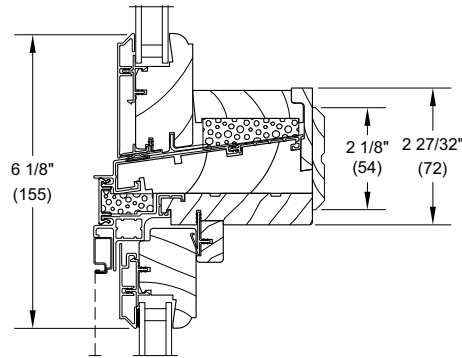


**Jamb  
in existing frame**

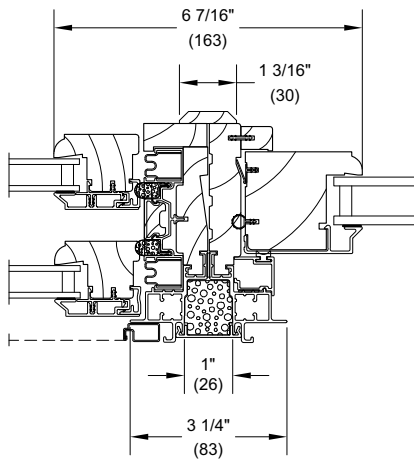
# Clad Insert Double Hung

## Mullions

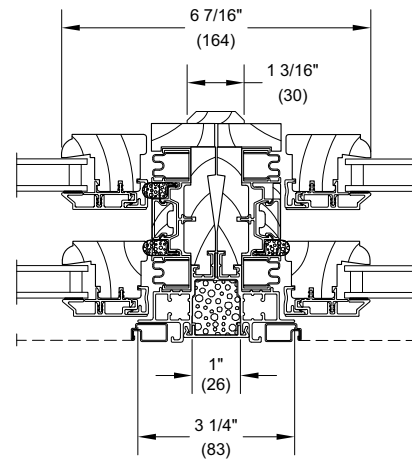
Scale: 3" = 1' 0"



Transom/Operator  
CINDH Horizontal Mullion



Operator/Picture  
CINDH Vertical Mullion

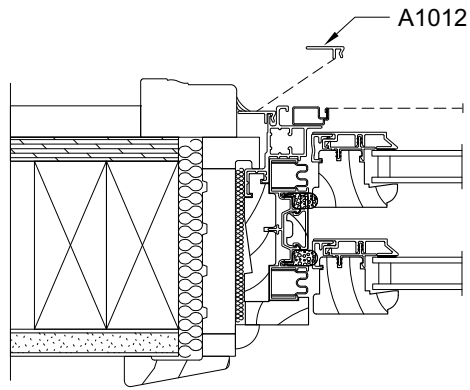


Operator/Operator  
CINDH Vertical Mullion

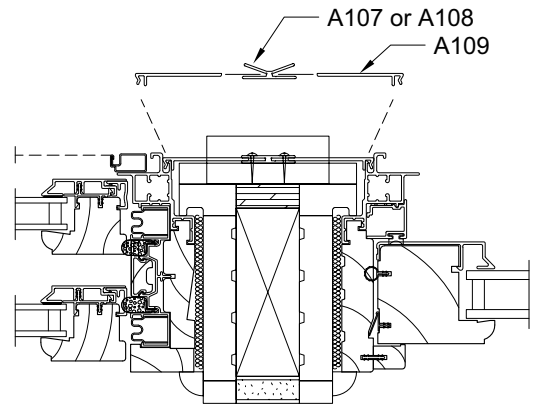
# Clad Insert Double Hung

## Clad Application

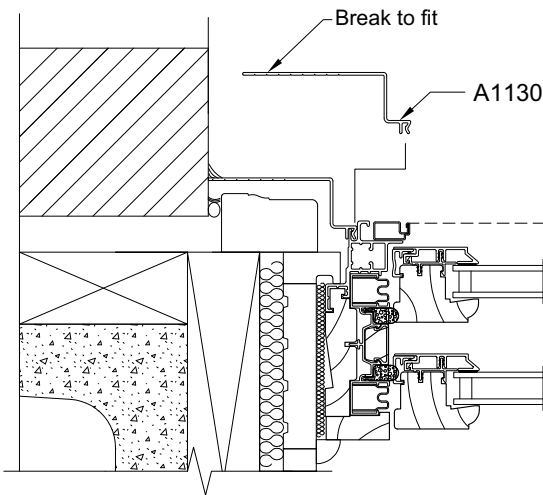
Scale: 3" - 1' 0"



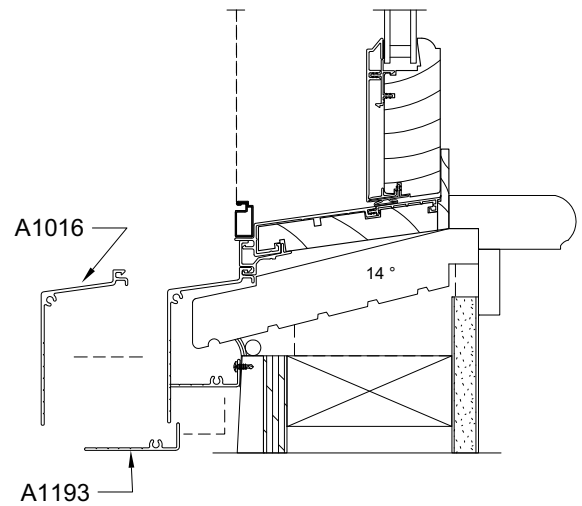
Frame Expander



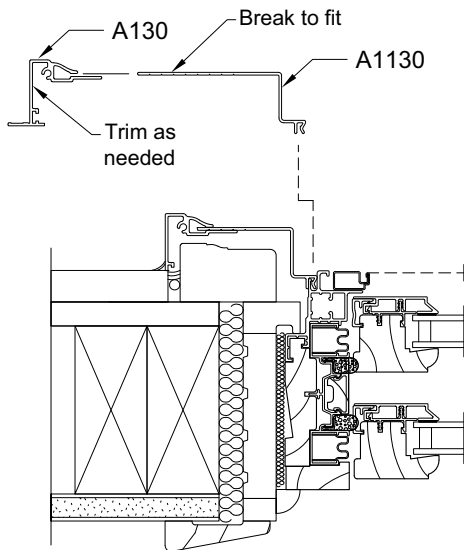
Frame Expander With Mullion Expander



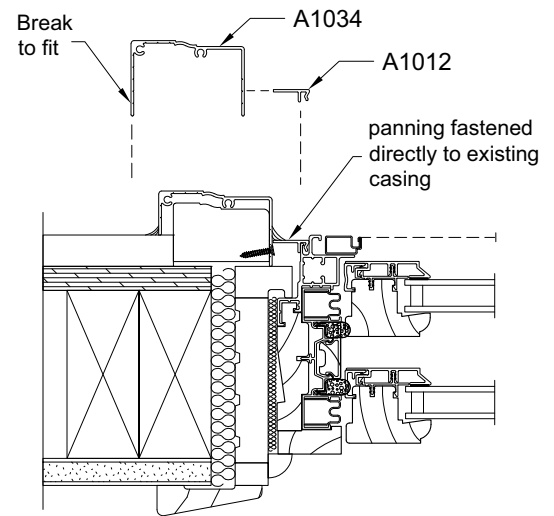
Panning-(Masonry shown)



Sill Panning



Clad Adjustable Brick Mould Casing



Panning-(BMC shown)